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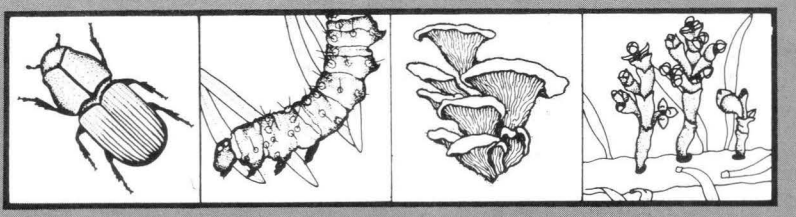

Report 92-4

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NORTHERN REGION GYPSY MOTH CONDITIONS REPORT - 1991

by

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INTRODUCTION

Northern Region areas surveyed for gypsy moth in 1991 included 13 National Forests, three National Parks, U.S. Army Corps of Engineers lands, U.S. Fish and Wildlife Service lands, Bureau of Land Management lands, and Bureau of Indian Affairs-administered lands. In addition, most urban centers including cities, towns, military bases, and major road corridors were again surveyed by State forestry and agricultural agencies in Montana, North Dakota, and Idaho in cooperation with the Animal and Plant Health Inspection Service (APHIS). Specific survey locations throughout the Region are included in the 1990 Northern Region Gypsy Moth Conditions Report No. 91-05.

This is the second year of an expanded effort to detect gypsy moth introductions. These efforts were intensified after a large population was discovered (1988) in the Salt Lake City, Utah, area, and because of increased population levels of the moth in the eastern United States. For the second consecutive year, survey cooperation by the participating Federal agencies has been excellent. The Northern Region's Division of Timber, Cooperative Forestry and Pest Management thanks the agencies and personnel who have made the detection survey a success.

This report summarizes results of The Northern Region's 1991 gypsy moth survey in Montana, North Dakota, northern Idaho, and Yellowstone National Park. The results of eradication efforts employing mass trapping in three northern Idaho communitees are reported. New developments associated with the Region's gypsy moth management are reviewed. The report also contains current information on a recent import (the Asian Gypsy moth, *Lymantria monarca*) to the west coast of Canada and the United States and its implications to management in the Northern Region.

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COOPERATIVE EFFORTS WITHIN THE REGION

Montana. The placement of 1,300 gypsy moth traps throughout the State in 1991 was a cooperative effort involving Montana Department of State Lands, Forestry Division; Montana Department of Agriculture; APHIS; National Park Service; Bureau of Indian Affairs; and USDA Forest Service.

In 1991, one moth was caught on the Beaverhead National Forest in the Madison River Campground; one moth was caught in Great Falls, Mt. and one moth was caught in Plentywood, Mt. Moths found in Great Falls and Plentywood were caught in APHIS traps. The moth caught in Great Falls was found in a "grid" detection trap placed in an area where two prior single catches occurred in 1989 and 1990. The area around the catch in Great Falls was again ground surveyed by APHIS personnel for gypsy moth life stages. None were found. The area will be intensively trapped in 1992 at a density of 16 traps per square mile in a 9-mile square grid. Similar procedures will be used at the sites of moth catches on the Beaverhead National Forest and at Plentywood.

The Montana Gypsy Moth Committee met in Helena in February of 1992 to discuss current trapping needs, the status of the Montana Contingency Plan of Action For Gypsy Moth, and management implications of the possible introduction of the Asian gypsy moth into Montana ecosystems. No eradication efforts for gypsy moth are planned for the State in 1992.

North Dakota. For the 1991 trapping season, 419 gypsy moth pheromone traps were placed in North Dakota. This is an increase of 100 traps from the 1990 survey. Trap placement was a cooperative effort involving North Dakota Forest Service, North Dakota Department of Agriculture, National Park Service, APHIS, U.S. Fish and Wildlife Service, Bureau of Land Management, Bureau of Indian Affairs, Corps of Engineers, and USDA Forest Service.

In 1991, three gypsy moths were caught throughout the State. One moth was caught in Mandan; two moths were caught in the Theodore Roosevelt National Park, one near the visitor center in Medora, and one in the Cottonwood Campground. The catch in the Cottonwood Campground was near the area where a moth was caught in 1990. Areas of positive moth catches will be intensively trapped during the 1992 flight season and ground surveyed for additional life stages.

Investigations by APHIS in 1991 determined that during 1990 a nursery in Quakerstown, Pennsylvania shipped approximately 185 gypsy moth-infested spruce trees to Fargo--located in the eastern part of the State. Investigations by APHIS were initiated after infested nursery stock was discovered by the Nebraska Department of Agriculture during the 1991 trapping season. Subsequent APHIS investigations revealed that thousands of gypsy moth-infested spruce trees were shipped to 11 states outside the gypsy moth quarantine area in 1991. Investigations also revealed that additional infested stock had been shipped in 1990. Ground surveys (discoveries of shipments were made after peak 1991 flight times, resulting in late season placement of survey traps) conducted in 1991 around distribution points were made but results were negative. Additional traps will be placed throughout Fargo during the 1992 trapping season to determine if reproducing moth populations are present as a result of these shipments.

Idaho. A total of 4,661 gypsy moth pheromone traps were placed throughout Idaho in 1991. The total included detection and delimitation traps. Trap placement was, again, a cooperative effort involving Idaho Departments of Agriculture and Lands, Bureau of Indian Affairs, Corps of Engineers, USDA Forest Service personnel from the Northern and Intermountain Regions, and APHIS.

During the 1991 trapping season, four moths were caught in detection traps in the State. Two moths were caught in northern Idaho, one in Moscow, Latah County, and one in Pinehurst, Shoeshone County; and two were caught in southern Idaho, one in Wendell, and one in Rigby.

Delimitation trapping was conducted at three sites. Fifty-seven traps were placed at Dover, where three gypsy moths were caught in 1989; 46 traps were placed in Idaho Falls, surrounding a trap site where two gypsy moths were caught in 1990; and 17 traps were placed in the area around the trap site in Wendell, where a single moth was caught in 1991. No moths were caught in the delimitation traps.

Following eradication efforts in Sandpoint and Coeur d'Alene in 1989 and 1990, no moths were caught in treated areas during mass detection trapping in 1990 or 1991.

Yellowstone National Park, Wyoming. As occurred in 1990, 118 pheromone traps were placed in 59 separate locations throughout the Park. Twenty-five traps were also placed in a separate delimitation survey conducted in the Madison Junction Campground. The Park and USDA Forest Service cooperated in trap placement. No moths were caught in either survey or special delimitation traps. The Park plans to continue a similar level of survey trapping in 1992. No delimit trapping in the Park is planned for 1992.

Northern Region Efforts. For the entire Northern Region (including Federal, State and private lands), eight moths were caught in 1991 with multiple catches. Trap reporting rates exceeded 90 percent for the second consecutive year.

The Asian gypsy moth (*Lymantria monarca*) represents a new threat to western forests. The moth was first discovered in Vancouver, British Columbia. Investigations by Agriculture Canada revealed that the moth was arriving via egg masses on Russian ships inbound from Siberia. Concurrent investigations conducted by APHIS indicate that several U.S. ports had also been exposed to infested Russian vessels. To date, four moths trapped in 1991 in the State of Washington, and one moth trapped in Portland, Oregon, have been identified by scientists at Cornell University as apparently the Asian strain of gypsy moth. A national survey plan for Asian gypsy moth is currently being formulated by Agriculture Canada, APHIS, USDA Forest Service, Forestry Canada, and the National Plant Board.

The Asian gypsy moth is hard to visually distinguish from its European cousin, but several unique characteristics associated with the Asian variety are cause for concern and distinguish it from its European cousin. These include female moths that fly (making the importance of early detection all the more critical), possible increased tolerance to cold, aggressiveness in terms of host and population buildup (the moth is known to complete its life cycle on Siberian larch in Russia), and a strong attraction to light.

Management implications associated with this moth, should it become established are (1) faster re-invasion of controlled areas after treatments, (2) possible crossing of genetic material with the European strain, and (3) the difficulty of identification of suspect specimen. Currently, only mitochondrial DNA techniques are available to positively identify suspect specimen as Asian gypsy moths.

Trapping recommendations for Federal cooperators in 1992 include continuation of survey trapping at the same level as 1991. Detection traps should be placed in areas of risk no later than June 15 so that emerging adult males can be detected. Traps should be retrieved by the end of September, after male moth flights have been completed.